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Research on physical education professional practice teaching system under the perspective of "Internet +"

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Abstract

This paper first introduces the Internet technology model and describes the implementation of Internet communication, using a bandwidth reservation scheme in uplink transmission to accomplish data transfer. Then the computing module of the Internet technology is introduced, using both local processing and computational offloading to accomplish the computing tasks. Then the computational resource allocation optimization problem is described. The computational resource allocation algorithm divides the total computational resources into minimum resource blocks and uses algorithm iteration to complete the computational resource allocation. Finally, the feasibility of modern practical teaching system is analyzed and evaluated in terms of talent training specifications and the overall situation of practical teaching in physical education majors. In the overall situation of practice teaching, the number of people satisfied with teaching work, the reasonableness of practice teaching arrangement, and the number of people satisfied with practice teaching methods, contents and modes were 49.6%, 53.7%, 64.9% and 72.9% respectively, which basically reached 50%-70%. In the situation of professional course resources and practical teaching, the number of teachers evaluating good is about 30%%, and students self-evaluating as good is about 40%. The overall level of professional practice teaching in physical education in the context of modern Internet is average, and there is still a lot of room for improvement.

Keywords: *internet+, physical education major, practical teaching, teaching system evaluation, computing resource allocation*

Introduction

Practical teaching is one of the most indispensable aspects of physical education majors in colleges and universities, and it is one of the important components of physical education majors (Chambers, 2018). Practical teaching is an important way for physical education students to go to the teaching stage and to accumulate practical teaching experience (Li Z 2019). Practical education not only allows students to personally participate in education and teaching, but also enables them to transform the theoretical knowledge they have learned into classroom energy through hands-on practical skills, and to better carry out primary and secondary school physical education classes through teaching by example (G Burnaford, 2019) (SeMyung, 2017). In the practical teaching

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session, practical operation can fully mobilize students' learning enthusiasm, which is of key significance to students' ability development, social practice, personality sharpening, quality development and professional skills enhancement (Zhu J 2010).

The literature (C, 2018) points out the characteristics of the curriculum of physical education in China: the tendency of "emphasizing technique over theory" is gradually decreasing, the curriculum system still reflects the characteristics of "multi-purpose and one-specialty", the proportion of compulsory courses is decreasing, and the proportion of elective courses is increasing. The degree of "socialization" of physical education courses is increasing, and the practical part of teaching training, field command and refereeing practice is an important part of the teaching. The literature (Souza Neto, Iza, & Silva, 2017) points out that "the innovative spirit and practical ability of physical education students are mainly reflected in the innovative spirit and practical ability of physical education teaching practice". The literature (Chen & Bai, 2017) pointed out that "the research on the theory and practice of physical education teaching evaluation in China is quite weak, and the teaching evaluation system of technical courses such as general athletics courses in physical education is not sound. It is recommended that in-depth and extensive research on the theory and practice of educational evaluation and physical education teaching evaluation should continue, and on the basis of the research on the teaching evaluation of general athletics courses in physical education, a teaching evaluation system for technical courses in physical education should be gradually established. The literature (Shi X 2017) points out that "the reform is a comprehensive reform in terms of the teaching objectives of special courses, improvement of teaching contents, teaching methods and methods, the conception of teaching faculty construction of art theory, and the cultivation of students' comprehensive abilities in teaching ability, refereeing ability, training ability, scientific research and innovation ability, the selection of athletics teaching materials, the development of teaching resources, and the improvement of the special athletics teaching system ". Literature (Murray S 2017) pointed out that "the current concept of practical teaching is vaguely understood and has its irrationality on its function and orientation, which only stays in experiments, internships and practical training, and the understanding of practical teaching links is too one-sided and narrow".

The literature (Quang, 2021) points out that "the reform is comprehensive in terms of the teaching objectives of the special course, the improvement of teaching contents, teaching methods and approaches, the conception of the construction of teachers for teaching the theory of arts, as well as the training of students' comprehensive abilities in terms of teaching ability, refereeing ability, training ability, scientific research and innovation ability, the selection of athletics teaching materials, the development of teaching resources, and the improvement of the special teaching system for athletics reform". The literature (Jiang, Leng, Zhang, & Zou, 2017) pointed out that "the current concept of practical teaching is vaguely understood, and its function and orientation have its unreasonableness, and it only stays in experiments, internships and practical training, and the understanding of practical teaching links is too one-sided and narrow". Literature (E, 2017)

explored the reasons affecting the development of practical ability of physical education students, pointing out that it is influenced by students' learning attitudes and efforts, by the curriculum, venues, equipment, devices, practical ability evaluation system, physical education examination system and methods, as well as the rationality of the structure of the teaching staff. The literature (Wang D 2016) considers that practical teaching is a teaching activity that deepens the understanding of theoretical knowledge by guiding students in the process of practical activities under the guidance of certain theoretical knowledge base, forming various skills and improving comprehensive quality in the process of practice. According to literature, "practical teaching is the sum of a series of teaching activities in which students acquire certain knowledge, skills and techniques and improve their overall quality through the guidance of teachers and their learning. The literature (H, 2018) mainly researched on the teaching methods of basketball in physical education, and mainly studied the use of diversified teaching methods in basketball teaching to improve students' motivation and enable them to learn actively, so as to improve the quality of teaching. The literature (J, 2018) argued that it should be, targeted, respect the differences between individual students, highlight the talents of students, analyze the strengths and weaknesses of different students, and teach according to their abilities.

This paper mainly studies the practical teaching situation of physical education majors in the context of "Internet+", explores some problems and evaluates the current situation of physical education majors. This paper mainly focuses on two parts. The first part introduces the Internet technology, firstly, the communication module of the Internet, which uses the bandwidth reservation scheme in the uplink transmission to complete the data transmission. Then the computation module is introduced, where the base station sends the user set tasks to the slave domain teleoperators after they have been computationally offloaded and processed. Finally the computational resource allocation optimization, the computational resource allocation optimization problem algorithm divides the total computational resources of the MEC server into minimum resource blocks of size and iterates through the algorithm to allocate the computational resources. The second part mainly introduces the specification of physical education professional personnel training and social talent demand, the general situation of physical education professional practice teaching and the education professional curriculum resources.

Internet technology model

Internet communication module

As shown in Figure 1, the traditional uplink accomplishes data transmission through a multiple access protocol. The scheduling request is sent from the user side to the base station. After that, the base station assigns channels to user devices and sends uplink transmission authorizations based on the channel status, which introduces a large portion of delay in the transmission process. Also the message needs to be decoded correctly, which increases the probability of packet loss in uplink transmission. Moreover, tactile packets are small (2-48 bits) and concurrent (1000-4000

packets/sec) compared to audio and video. The increase in latency leads to a significant decrease in QoE, which is unacceptable for the highly interactive tactile Internet. For these reasons, consider using a bandwidth reservation scheme for uplink transmission. By reserving a certain amount of bandwidth in advance for the tactile service, any time the tactile service has data to send, it can immediately send data on the reserved bandwidth without authorization.

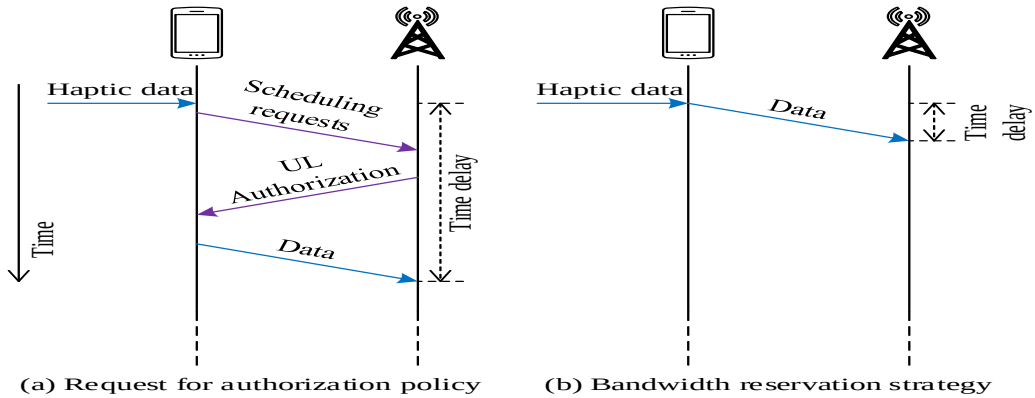

Figure 1: Communication model

The delay consists of two components: the transmission delay of the data frame sent by the host, and the queuing delay. They are denoted as D_u^t and D_u^q, respectively:

$$D_u^t = \frac{L^t}{V^t} \quad (1)$$

$$D_u^q = \frac{\bar{Q}}{\bar{N}} \quad (2)$$

where L^t represents the length of a data frame, V^t is the transmission rate, $\bar{Q}$ is the average cumulative queuing delay, and $\bar{N}$ represents the average number of packets in a resource block. The average packet loss probability can be interpreted as the ratio of the long-term average number of lost packets to the average number of arriving packets, expressed as ε^p:

$$\varepsilon^p = \frac{\bar{P}}{\bar{N}} \quad (3)$$

where $\bar{P}$ is the average number of packets discarded within a resource block.

Internet Computing Module

In the above scenario, we consider a binary computation model where each user device u needs

to perform a computational task and all computational tasks are indivisible. The task is described as $T_u = \{d_u, c_u\}$, where d_u represents the amount of input data and c_u is the number of cycles required for the central processing unit to process the data. Each user device has two modes of computational processing: local processing, and computational offloading. U_0 and U_1 denote the set of users for local processing and the set of users for computational offloading, respectively. Thus, $U = U_0 \cup U_1$ and $U_0 \cap U_1 = \phi$. After the task processing is completed, the base station sends it to the slave domain teleoperator, which returns tactile feedback. Assuming that the amount of computational task data from the slave domain device is small enough, the time to process the feedback transmission is negligible.

(1) Local processing:

Services with relatively lenient latency and reliability need to perform computational tasks locally when the MEC server is overloaded with computational tasks to be processed.

The local processing time D_u^{cl} of the tasks of user device u is expressed as:

$$D_u^{cl} = \frac{c_u}{f_u^l} \quad (4)$$

where f_u^l is the computing power of user device u.

Propagation delay is introduced during communication with remote devices. It can be expressed as:

$$D_u^p = \frac{L^p}{V^p} \quad (5)$$

where L^p, V^p is the channel length and propagation rate, respectively.

The total delay of local processing can be expressed as:

$$D_u^l = D_u^{cl} + D_u^t + D_u^q + D_u^p \quad (6)$$

(2) Calculation of offloading:

Based on the small size of tactile traffic packet specifications, the Shannon formula cannot accurately characterize the channel capacity. We use finite block length channel coding with an approximate coding rate of:

$$R_u\left(n, \varepsilon^c\right) = W \log_2\left(1 + \frac{p_u h_u}{\sigma^2}\right) - \sqrt{\frac{\xi}{n}} Q^{-1}\left(\varepsilon^c\right) \quad (7)$$

In the above equation, the first term represents the Shannon channel capacity C. n is the block length, ς is the channel dispersion, and ε^c is the packet error probability. $Q(\cdot)$ represents the Gaussian Q function :

$$Q(x) @ \int_x^{\infty} \frac{1}{\sqrt{2\pi}} e^{-\frac{t^2}{2}} dt \quad (8)$$

The computational latency of the task in computational offload mode includes the latency of transmission to the MEC node and the latency of processing by the MEC node. They are denoted as:

$$D_u^{to} = \frac{d_u}{R_u} \quad (9)$$

$$D_u^{co} = \frac{c_u}{f_u^o} \quad (10)$$

where f_u^o is the computing resource allocated by the MEC node to user device u.

Computing Resource f_u^o shall meet the following constraints:

$$\sum_{u \in U_1} f_u^o \le F^o \quad (11)$$

$$f_u^o \ge \frac{c_u R_u}{D_u^{p*} R_u - d_u}, \forall u \in U_1 \quad (12)$$

where F^o represents the total computing resources of the MEC server and D_u^{p*} is the maximum acceptable processing latency.

Calculating the total offload latency can be obtained by the following equation:

$$D_u^o = D_u^{co} + D_u^{to} + D_u^t + D_u^q + D_u^p \quad (13)$$

Internet QoE Module

As shown in related work, QoE models can be divided into mathematical models and machine learning models. Mathematical models discover the relationship between influencing factors and QoE through statistical analysis, which may lead to hiding the model parameters. Therefore, a machine learning approach is used here to explore the explicit model of QoE, represented as the popular sigmoid function:

$$Q_u = \frac{\theta}{1+e^{(\alpha S_u + \beta r_u + \gamma)}} \quad (14)$$

where α, β, and γ are the QoE constraint parameters. r_u and S_u represent the user preference parameters and QoS parameters of the user u respectively. the QoS requirements can be expressed in terms of end-to-end delay and error probability ε.

The task calculation of user u is indicated by task identifier a_u:

$$a_u = \begin{cases} 1, & u \in U_1 \\ 0, & u \in U_0 \end{cases} \quad (15)$$

According to the computation and communication model, S_u in different modes can be expressed as:

$$S_u^l = \xi \frac{\varepsilon_u}{\varepsilon_{\max}} + (1-\xi)\frac{D_{u\max} - D_u^l}{D_{u\max}} \quad (16)$$

$$S_u^o = \xi \frac{\varepsilon_u}{\varepsilon_{\max}} + (1-\xi)\frac{D_{u\max} - D_u^o}{D_{u\max}} \quad (17)$$

Therefore, the equation can be rewritten as follows:

$$Q_u = a_u \frac{\theta}{1+e^{\alpha S_u^l + \beta r_u + Y}} + (1-a_u)\frac{\theta}{1+e^{\alpha S_u^o + \beta r_u + \gamma}} \quad (18)$$

Computational resource allocation optimization problem

In a QoE-driven tactile Internet scenario, maximizing the value of overall QoE leads to better user satisfaction. The optimization problem is formally formulated as P.

$$\begin{aligned} &\max_{A,F} \frac{1}{U}\sum_{u\in U} Q_u \\ \text{s.t.}\ &C1: \sum_{u\in U} a_u \le M \\ &C2: a_u \in \{0,1\}, \forall u \in U \\ &C3: \sum_{u\in U_1} f_u^o \le F^o \\ &C4: f_u^o \ge \frac{c_u R_u}{D_u^{p*} R_u - d_u}, \forall u \in U_1 \\ &C5: D_u^l, D_u^o \le D_u^{\max} \\ &C6: \varepsilon_u^p + \varepsilon_u^c \le \varepsilon_u^{\max} \end{aligned} \quad (19)$$

In this problem, equation (19) represents maximizing the average QoE of all tactile users. C1 indicates that the number of computationally offloaded users must not exceed the maximum number of subchannels. C2 indicates that each user can choose one of two task computation modes. C3 and C4 represent constraints on the computational resources allocated to users. C5 and C6 limit the latency and feasibility to meet the minimum communication requirements of tactile users.

The problem is a nonlinear integer nonconvex optimization problem that cannot be solved in polynomial computation time by conventional algorithms. Therefore, it is decomposed into two subproblems to solve: optimization of user computational mode selection and optimization of computational resource allocation. This optimization problem can be solved by finding an optimization policy set (A, F). Where A represents the offloading decision variable and F represents the computational resource allocation variable.

The computational resource allocation problem is considered in determining the offloading decision policy, i.e., the task computation pattern for each user is determined. Thus, the computational resource allocation optimization problem P_2 can be expressed as:

$$\begin{aligned}&\max \sum_{u\in \mathrm{U}_1} Q_u \\ &\text{s.t.C1}: \sum_{u\in U_1} f_u^a \le F^a \\ &\text{C2}: f_u^o \ge \frac{c_u R_u}{D_u^{p^*} R_u - d_u}, \forall u \in U_1\end{aligned} \tag{20}$$

The computational resource allocation policy depends not only on the QoE requirements of individual user devices, but also on the computational resources occupied by other devices. Therefore, we can analyze this problem with an exact potential game.

The game can be represented as $\Gamma_1 \left\{ U_1, \left(F^u\right)_{u\in U_1}, \left(Q_u\right)_{u\in U_1} \right\}$, where U_1 is the set of players involved in computing the offload, F^u is the set of strategies of player u, and Q_u is the QoE score of player u.

Definition 1: A game $\Gamma = \left\{ £, \left(Y^i\right)_{i\in £}, \left(\mathrm{J}_{\ i\in £}\right) \right\}$ is an exact potential game if there exists a function $H: Y \to R$ for $\forall i \in £, \forall y^{-i} \in Y^i, \forall x, z \in Y^i$ such that $v_i\left(x, y^{-i}\right) - v_i\left(z, y^{-i}\right) = H\left(x, y^{-i}\right) - H\left(z, y^{-i}\right)$. y^{-i} denotes the complementary set of y^i.

$£, H, Y^i, \mathrm{J}_i$ the set of participants, the potential function, the set of strategies of participants i and the utility function, respectively.

For the potential game $\Gamma_1\left\{U_1,\left(F^u\right)_{u\in U_1},\left(Q_u\right)_{u\in U_1}\right\}$, where $Q_u=\frac{\theta}{1+e^{\left(\alpha S_u^h+\beta_u^r+\gamma\right)}}$, the potential function can be described as $H=\sum_{u\in U_1}\frac{1}{1+e^{\left(\alpha S_u^o+\beta_u^r+\gamma\right)}}=\sum_{u\in U_1}Q_u$. Therefore, the game is an exact potential game with potential function H.

Every finite order potential game has a pure strategy equilibrium with finite improvement property. Therefore, an approximate greedy algorithm can be used to solve this problem.

The compute resource allocation algorithm divides the total compute resources of the MEC server into the smallest resource blocks of size f_m. All users performing compute offloads have the opportunity to compete for the resource blocks. The user with the most improvement in overall QoE wins the resource block and updates the resource allocation set. The algorithm iterates until the computational resources are allocated, resulting in a set of computational resource allocations $F=\left\{f_1^o, f_2^o,\ldots, f_M^o\right\}$, where f_u^o denotes the computational resources allocated to user u.

Evaluation of physical education professional practice teaching system under the perspective of "Internet+"

Analysis of talent training specifications for physical education majors

According to the training program of physical education major, the training goal of physical education major is to cultivate professionals with excellent professionalism, broad professional foundation and advanced education concept, who can work as physical education and health education, teaching and amateur training competition, and can engage in social sports guidance and sports competition planning and organization.

According to the training program of physical education major, the training goal of physical education major is to cultivate professionals with excellent professionalism, broad professional foundation and advanced education concept, who can work in physical education and health education, teaching and amateur training competition in schools, and can engage in social sports guidance and sports competition planning and organization, and the employment direction is mainly The employment direction is mainly for the daily management of school physical education teaching and training. At present, the social demand for physical education graduates in large and medium-sized cities tends to be saturated, and the employment rate is between 75% and 85%, and the social competition is becoming more and more fierce.

The data from the questionnaire survey of 47 primary and secondary school teachers in Shanghai

are shown in Figure 2: the top three rankings of the importance of each practical ability of graduates were teaching ability, ability to instruct extracurricular physical education activities, and ability to apply modern educational technology, each accounting for 66%, 57%, and 45% of the surveyed students. On the whole, primary and secondary schools attach great importance to all competencies of physical education teacher trainees, especially teaching ability, ability to direct extracurricular physical education activities, and ability to apply modern educational technology. Because they cover the basic daily workload of physical education teachers in primary and secondary schools, they also reflect that current primary and secondary schools attach considerable importance to graduates' practical work ability and application ability, and require graduates to be able to quickly integrate into new environments and adapt to their work roles. Figure 2 shows the analysis of each practical ability.

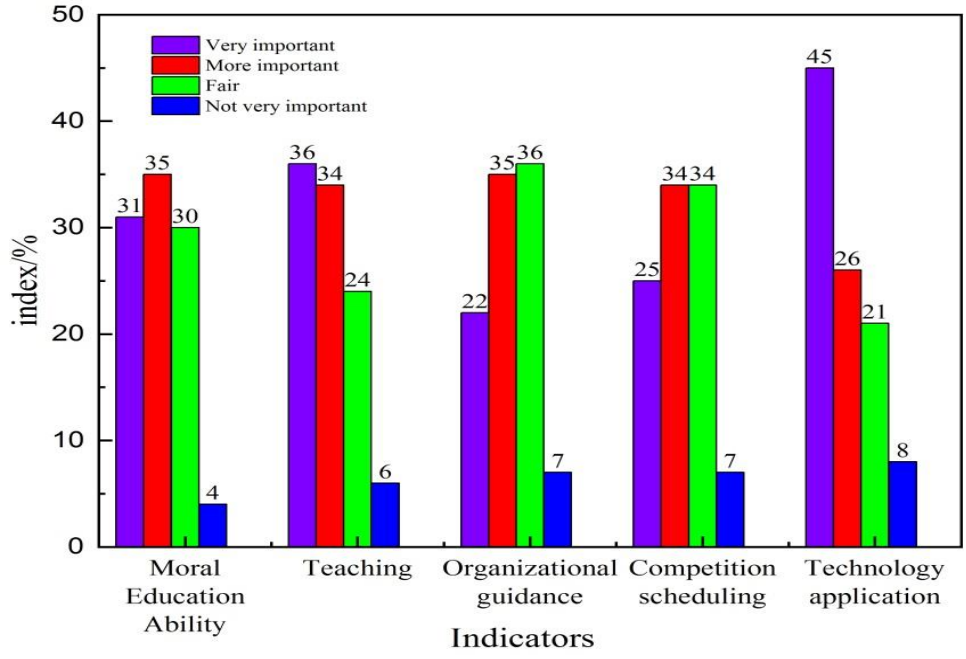

Figure 2: Each practical ability

In addition, according to the internship evaluation data of physical education graduates of Shanghai Institute of Physical Education, grades 16-18, as shown in Table 1, it can be seen from the evaluation of internship teachers that 62.3% and 48.7% of the interns think that the interns' teaching ability and modern education technology application ability are average, respectively, and 46.2% of the interns have poor ability to guide extracurricular physical education activities. The first two items differed from the students' self-evaluation data in that the interns' self-evaluation was too high and some students had not yet recognized the deficiencies or defects, while the third item was basically the same for both instructors and interns. It can be seen that there is still a gap

between the practical ability of graduates and the needs of employers in basic education, and the cultivation of much-needed practical ability is not prominent enough, and the cultivation of practical ability of students still needs to be further strengthened.

Table 1: Evaluation of the internship of physical education graduates from 16-18 classes

Evaluation Content	Internship Supervisor			Internship self-evaluation		
	Good	Fair	Poor	Good	Fair	Poor
Teaching ability	17.5% .	62.3% .	22. 2%	35.5%	47.5%	17%
Ability to apply modern education technology	31.9%	48.7%	19. 4%	22.5%	72.5%	5%
Ability to guide extracurricular sports activities	24.2%	29. 6%	46.2%	20%	30%	50%

Analysis of the overall situation of practical teaching in physical education

Physical education is a discipline with high practical and application requirements, and practical teaching is an important way to gain work experience and practical ability as physical education teachers' talents before employment. The role of practical teaching occupies an important place in whether the talents trained by the school can quickly and well adapt to the needs of the society.

The number of people who are satisfied with the practical teaching work of Shanghai Sports College is 7.8%, and 31.8% are basically satisfied, which indicates that the school's work has certain effectiveness and still needs continuous improvement and enhancement. In terms of the reasonableness of the practical teaching arrangement of the school:21.6%, 32.1%, 28.7% and 17.8% of the students think that the practical teaching arrangement is reasonable, basically reasonable, not too reasonable and very unreasonable respectively, which indicates that there is some unreasonableness in the practical teaching arrangement of the school, and the school and the faculty need to make adjustments to the practical teaching arrangement to better meet the cultivation of talents. The percentage of those who adapt to the practical teaching methods, contents and modes of the college and the overall requirements of the society for the practical ability of talents is 21.6%, 32.1% are basically adapted, 28.7% are not adapted and 17.8% are very unadapted. From this point of view, the college needs to change the way, content and mode of practical teaching, so as to be closer to the society and adapt to the social demand. The degree of connection and complementarity between practical teaching and theoretical teaching implemented in the college is average, and those who think it is poor account for 27.1%. From this analysis, the degree of connection and complementarity between practical teaching and theoretical teaching in the college is not enough, and the combination of the two is not very effective, and there is room for improvement in this aspect. Figure 3 shows the recognition degree of practical teaching in the school.

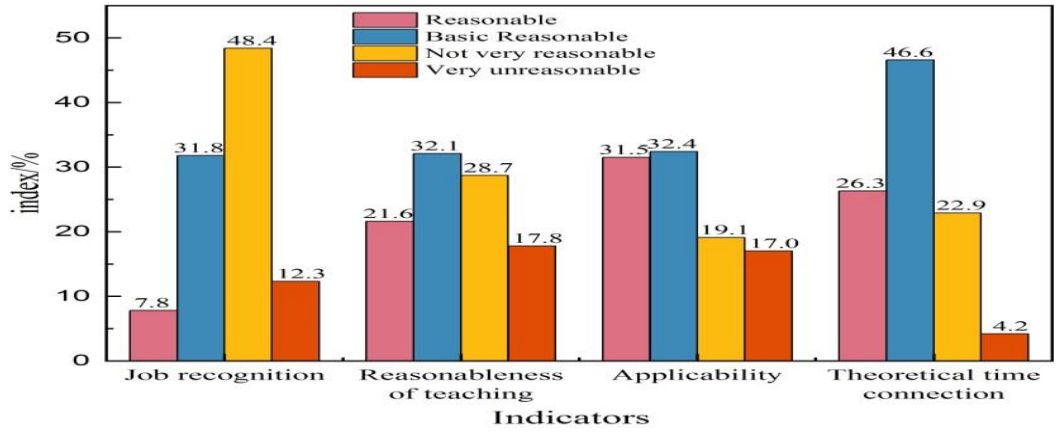

Figure 3: Degree of recognition of practical teaching work in schools

Analysis of the situation of curriculum resources for education majors

Table 2 shows the analysis of the proportion of practical teaching course credits in physical education majors in the past years. The total credits of physical education training courses have been increasing, and the proportion of practical courses in the total credits has been increasing year by year. The proportion of credits of public basic platform courses is compressed year by year, and tends to concentrate on discipline basic platform courses and professional orientation modules, and innovation and entrepreneurship training is added to the curriculum to better cultivate students' innovation ability and independent entrepreneurship. Thus, it seems that the school is paying more attention to the cultivation of students' professional ability, and the reform of practical teaching in the school is gradually becoming systematic and independent.

Table 2: Analysis of credit ratio of practical teaching courses in previous years

Year	Total Course Credits%	Public Foundation Platform Course%	Discipline Foundation Platform Course%	Specialized Platform Foundation Course%	Professional Orientation Module Course%	Innovative Ship Training Program%	Total percentage %
2001	163	5.3	15.4	2.6	14	0	37.3
2004	155.5	3.7	11.1	4.3	18.1	0	36.2
2006	160	3.1	12.3	3.4	15.3	2.4	36.5
2008	163	2.4	10.3	12.2	21.8	2.4	49.2

Table 3 shows the practical courses of physical education majors in Shanghai Institute of Physical Education, listing the practical courses of physical education majors in Shanghai Institute of Physical Education, including four blocks of computer, experiment, practical training and internship, covering the cultivation of eight practical abilities such as the ability to apply modern educational technology, teaching ability, the ability to organize training and guide competitions, the ability to organize and choreograph various sports competitions, the ability to referee work, the

ability to guide extracurricular sports activities, the ability to conduct sports research, and the ability to moral education.

Table 3 Professional practical courses

On the machine	Basic computer application, VB simple programming, multimedia technology for teaching
Experiment	Exercise physiology, exercise anatomy, exercise biomechanics, sports health, sports psychology
Practical training	Art courses, teacher language art, teacher writing art, effective teaching, classroom teaching skills Training, classroom management, teaching methods of secondary school physical education materials, micro-grid teaching, education study, school problem seminar, innovation and entrepreneurship training program
Internship	Educational internship, educational practice, graduation thesis

This paper starts from the definition of practical courses and the concept of practical teaching, and according to the role and function of practical courses on the cultivation of students' ability, the content of practical teaching of physical education majors is divided into three categories: vocational practical teaching, discipline-specific practical teaching and comprehensive practical teaching through expert questionnaire certification.

Survey and Analysis of Vocational Practical Teaching

Practical teacher training is an important way for students to develop their role as teachers, an effective channel to acquire the basic skills necessary for the teaching profession, and to apply them in practice, transform them into their own abilities, and gradually professionalize the process, laying a good foundation for job hunting and teaching after joining the profession. The general skills of teachers are not only the skills needed by physical education teachers, but also the teaching skills needed by all other subjects such as language and mathematics. The three components of basic language and writing skills, teaching work, and classroom work are mandatory parts of teacher training for teacher trainees. Teaching skills training for teacher-training students is a practical activity that links theory with practice, and is a basic teaching skills training based on professional knowledge under the guidance of pedagogy, psychology and subject teaching theory. The physical education major itself has the dual characteristics of teacher training and demonstration, so the professional skills training for teachers is essential for students of this major.

Figure 4 shows the instructor's evaluation. Figure 5 shows the students' self-evaluation. By classifying the internship evaluations of physical education students, statistics were conducted to investigate the interns' verbal and written expression ability, classroom teaching design and evaluation ability, multimedia application ability, classroom organization ability, lesson plan writing ability, and post-class reflection and summarization ability. In the evaluation of the instructors, 34% of them thought that the interns' teacher internship language and writing expression ability was

very good, 41% thought it was average, and 22% thought it was poor. In terms of lesson plan writing ability, 24% thought the lesson plan writing ability was relatively good, 57% thought it was average, and 19% thought it was poor. In terms of classroom organization ability, 19% thought it was better. Regarding the ability to use multimedia, 46% thought it was better. In terms of classroom teaching design ability, 26% thought it was better. As for the ability to summarize after class, 30% thought it was better and 28% thought it was worse. This shows that the teacher training ability is not outstanding, especially in classroom organization ability, classroom teaching design and evaluation ability and post-lesson reflection and summarization ability. In the students' self-evaluation, the percentages of those who thought they were better in language expression, lesson plan writing, classroom organization, multimedia application, classroom teaching design, and post-class summary were 33%, 23%, 19%, 46%, 26%, and 30%, respectively, and the percentages of those who thought they were worse were 22%, 19%, 36%, 17%, 27%, and 28%, respectively. The students' self-evaluation was generally considered high and differed from the evaluation of the internship school instructors, probably due to the lower requirements for themselves.

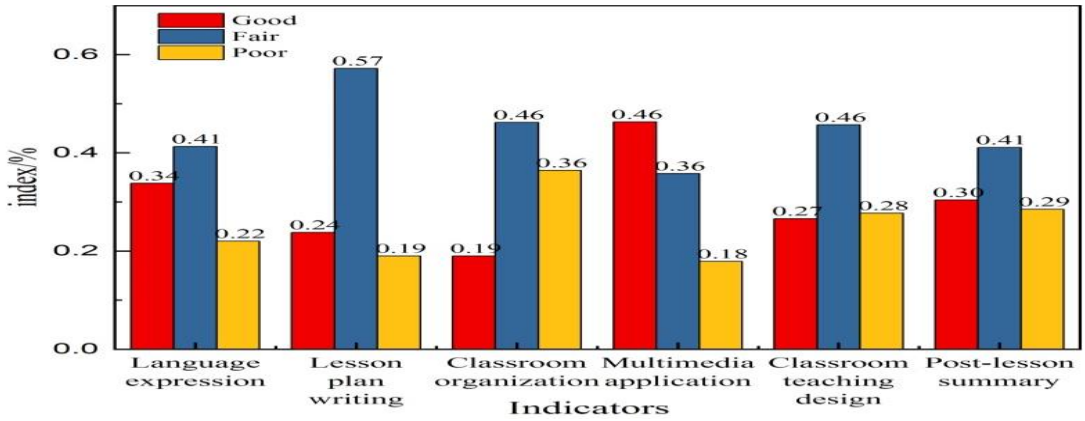

Figure 4: Instructor evaluation

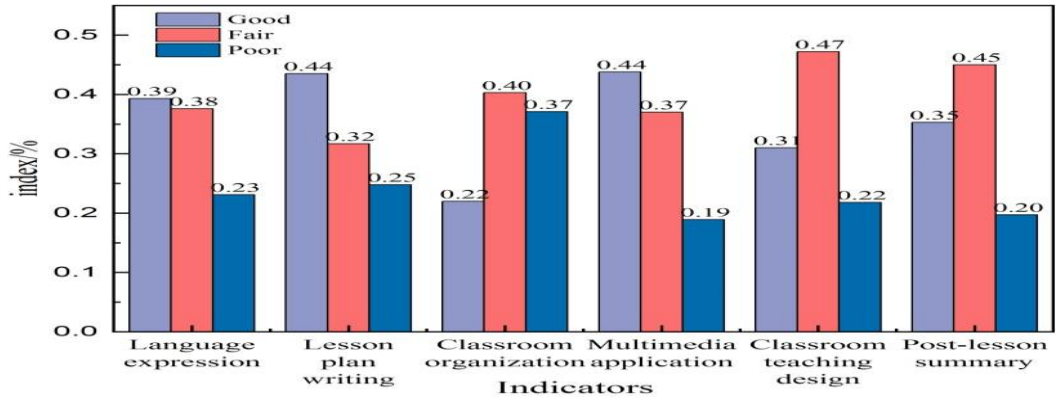

Figure 5: Student self-evaluation

Conclusion

This paper analyzes the practical teaching of physical education majors under the perspective of "Internet+" from the analysis of talent cultivation specifications and social talent demand, the general situation of practical teaching of physical education majors, and the teaching situation of curriculum resources and environmental cases of education majors. The following conclusions are drawn:

1. In terms of professional talent cultivation specifications and social talent demand, the top three rankings of importance of graduates' practical abilities are teaching ability, ability to guide extracurricular sports activities, and ability to apply modern education technology, accounting for 66%, 57%, and 45% of the surveyed population respectively.

2. In the overall situation of practical teaching of physical education majors, the number of people who are satisfied with the work of practical teaching accounts for 39.6%, and those who think the arrangement of practical teaching and satisfaction with the way, content and mode of practical teaching and society's ability to practice talents account for about 50%. Those who are satisfied with the degree of connection and complementarity between practical teaching and theoretical teaching implemented in the college account for 72.9%.

3. As for the vocational practical teaching, in terms of language expression, lesson plan writing, classroom organization, multimedia application, classroom teaching design, and post-class summary, the number of teachers who rated it as better was about 30%, and the number of students who rated it as better in their self-evaluation was about 40%, indicating that there is still much room for improvement in physical education practical teaching.

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